

## Mobile Quarantine Trailer Gets Test During Apollo IX

Three make-believe astronauts from the Manned Spacecraft Center and one MSC flight surgeon and a technician will enter a silvery house trailer next week to test its ability to return moon explorers from their splashdown point to Houston.

The trailer is MSC's Mobile Quarantine Facility (MQF), a vehicle that looks much like a regular house trailer but has special bacteriological seals to isolate its environment from the environment surrounding it.

During the last four days of Apollo 9, the four test subjects will live in the MQF aboard the main recovery ship, the USS Guadalcanal, in the Atlantic Ocean. They will remain sealed in the trailer, except for the brief period when it is moved from the Guadalcanal to a cargo plane at Norfolk, Va., until they arrive back at Houston.

The test subjects are Dr. William Carpentier, John Horasaki, chief project engineer, and make-believe astronauts Paul Krup-

penbacher, Texas Ward and Arthur Lizza, all MSC technicians.

On the return from a real lunar mission, astronauts will spend four or five days in the MQF and at least two weeks in the MSC Lunar Receiving Laboratory before they can be released from quarantine.

This period is required to make sure that the astronauts did not bring back from the moon any organisms that might contaminate the earth.

The trailer-like MQF weighs 12,000 pounds, is 35 feet long, nine feet wide and eight and a half feet high. It contains a microwave oven for preparing frozen dinners, a tub, six bunks and a lounge with six airplane-type seats.

Water used in the shower and laboratory will be stored in special waste water tanks for delivery to MSC for study, along with other materials, for any signs of lunar contamination.

(Continued on page 4)

## New Congressmen Visit For Space Introduction

The House Subcommittee on Manned Space Flight, chaired by Congressman Olin Teague, will visit MSC to conduct hearings on Saturday, March 8.

During the visit, planned primarily as an orientation tour and briefing for new committee members, the group will hear presentations by Dr. Gilruth and top Center Management. A morning session will stress significant current activities and future planning, while an afternoon's tour will highlight the Mission Control Center, the Space Environment Simulation Laboratory, and the Mission Simulation and Training Facility.

The stop at MSC will be the fourth on an agenda to include Cape Kennedy, Marshall, Michoud, and the Manned Spacecraft Center. Each Center has been asked to be prepared to clearly define its participation in all new project starts.

The visit will not be exclusive to members of the subcommittee. Other new members of the House Committee on Science

and Astronautics and other interested congressmen also have been invited. The new members are: Democrats Bertram Podell (N. Y.), Wayne N. Aspinall (Colo.), Roy A. Taylor (N. C.), Henry Helstoski (N. J.), Mario Biaggi (N. Y.), James W. Symington (Mo.), Edward I. Koch (N. Y.) and Republicans Robert Price (Tex.), Lowell Weicker (Conn.) and Lewis Frey (Fla.).

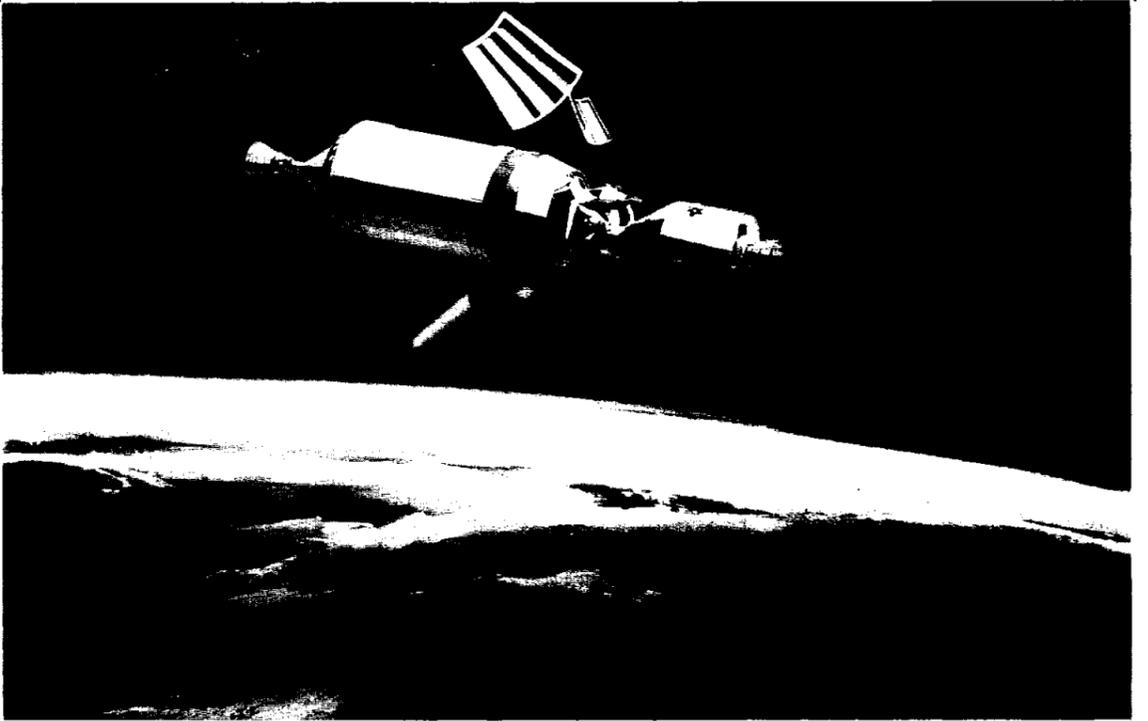
Congressmen Podell and Aspinall are the two new members of the subcommittee.

## Joint British-U.S. Program Planned

A British space satellite will be prepared for launching by the United States in a new cooperative program negotiated by the British Science Research Council (SRC) and NASA.

The satellite will be the fourth in a series of successful Ariel I, II and III satellite projects. It is scheduled for launch into polar orbit on a Scout rocket from the Western Test Range in California in the 1971-72 period. It will carry four United Kingdom and one U. S. experiment to explore interactions among the plasma charged particle streams and electromagnetic waves in the upper atmosphere.

## Perfect Linkup, Stable Flight

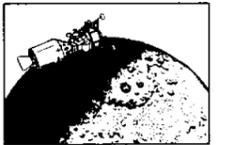


AS ADVERTISED—Artist's Concept shows Apollo IX Command and Service Modules docking nose first with the unmanned Lunar Module, which is still attached to the third stage of the Saturn V rocket that launched both vehicles into orbit. This maneuver was the first of many tests planned with the LM during its first manned check-out in space. If this docking had not been successful, Apollo IX would have been unable to carry out the rest of the tests planned for its ten day stay in Earth orbit. Docking worked, and the linked up craft flew perfectly.

# ROUNDUP

NASA MANNED SPACECRAFT CENTER

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## NEARS HALF-WAY MARK—

# Apollo IX Up and Orbiting, First Manned LM Flight

Apollo IX—the first manned test of the lunar module—was half way through its 10-day mission at ROUNDUP press time with several of its test objectives successfully concluded.

The Apollo IX crew—com-

mander James A. McDivitt, command module pilot David Scott and lunar module pilot Russell Schweickart — were 'grounded' on the original launch day of February 28 because of sore throats and congestion. They snapped back and were given the 'go' on March 3 entered the Apollo IX spacecraft for an on-time liftoff of 10 a.m. CST.

From launch through the first several days of flight all systems performed as programmed and on March 5 McDivitt and Schweickart became the first U.S. astronauts to make intravehicular transfer from the command module into the lunar module.

Although an earth-orbital mission, Apollo IX activities are a major step in accomplishing a lunar landing. Highlights include extensive performance tests of the Lunar Module and rendezvous maneuvers with the Lunar Module and Command/Service Modules.

Vice-president Spiro T. Agnew and Dr. Thomas O. Payne, NASA administrator, were among dignitaries observing the countdown from the Launch Control Center.

During liftoff, an indicator in the spacecraft cabin gave a zero reading for the helium pressure in the Service Propulsion System (SPS), but ground telemetry showed the pressure normal and posed no threat to the mission.

At slightly more than 11 minutes into the flight orbit insertion was confirmed to be near circular at 103 nautical miles. Space-

craft separation from the third stage and Command/Service Module-Lunar Module docking was accomplished at approximately three hours from liftoff. Lunar Module ejection from the S-IVB third stage took place about one hour later. Other activities during day one included first burn of the SPS and two restarts of the S-IVB engine.

For the first time in the Apollo program all three astronauts were scheduled to sleep simultaneously.

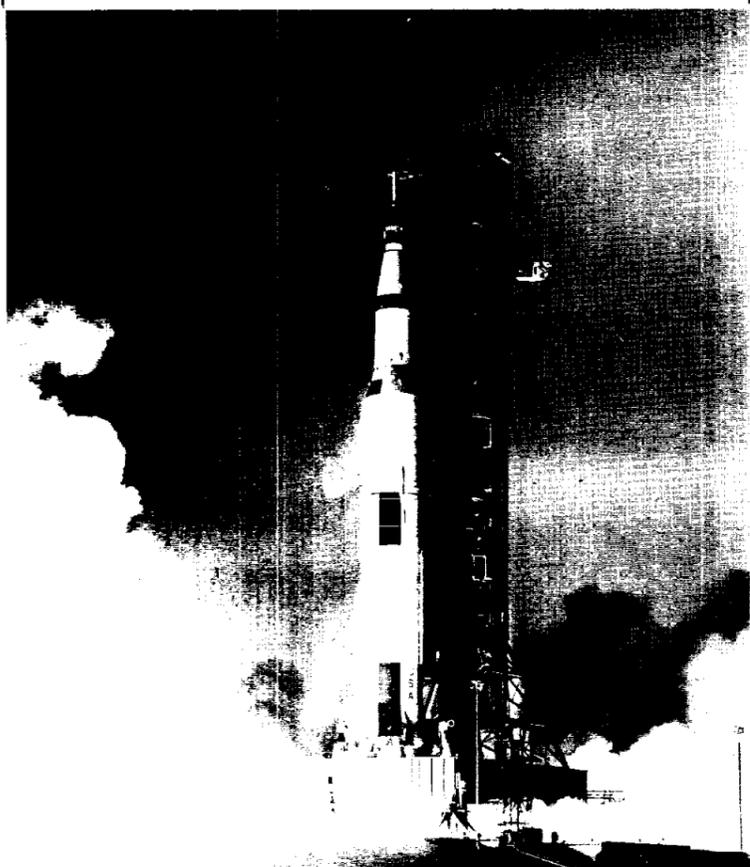
Day two began at 4:30 a.m. CST and consisted mainly of three burns of the 25,000 pound-thrust SPS engine. The last burn placed the spacecraft into an orbit of 272 NM apogee and 109 NM perigee.

Wednesday's activities started even earlier at 1:30 a.m. and after breakfast the crew began preparation for transfer from the Command Module to the Lunar Module. After a delay of about one hour from the planned intravehicular transfer (IVT) time it was confirmed that Schweickart had completed the transfer. McDivitt transferred about another hour later. At 8:27 a.m. television was received from the Lunar Module for a period of about seven minutes. After transferring back into the Command Module a fifth burn of the SPS circularized the orbit to 129 NM by 127 NM.

The third sleep period, lasting ten hours, began at 7:00 p.m.

As of press time, the mission time lines are to remain the same with the exception of EVA (Continued on page 2)

## 'Gum Drop—Spider' On The Way



BIG BIRD—After a three-day delay the mammoth Saturn V launch vehicle (A/S 504) lifts off Launch Complex 39A on March 3 pushing the heaviest manned payload to date—the complete Apollo 9 spacecraft. The earth-orbital mission marks the first manned test of the Lunar Module including rendezvous maneuvers with the Command/Service Modules.

## Anders Speaks to American Astronautical Society



**OFFICERS FOR 1969**—The new officers and directors for the Houston Section of the American Astronautical Society join Astronaut William Anders at the podium of the society's first formal meeting of the year. Anders, a crew member on Apollo's historic circumlunar flight, showed selected lunar surface slides to the meeting of about a hundred. Shown are: Treasurer Paul Penzo (TRW), Director Al Thompson (GE), Secretary Aneta Davis (MSC), Paige Burbank (MSC), National Director Warren Gillespie (MSC), Anders, Vice-Chairman Ted Hays, (MSC), Chairman Al Naumann (North American), and Directors Clay Fulcher (GE), Al Nado (MSC), William Walker (NR), and George Straty (Philco).

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Director . . . . . Dr. Robert R. Gilruth  
 Public Affairs Officer . . . . . Paul Haney  
 Editor . . . . . Terry White  
 Staff Photographer . . . . . A. "Pat" Patnesky

## Hjornevik Helps Shape College Science Study

Wesley L. Hjornevik, MSC's Associate Director, has been invited to participate in the formation of a new Program for Advanced Study in Public Science Policy and Administration at the University of New Mexico.

Hjornevik will serve both as a permanent advisor on the university's Regional Advisory Committee and as a contributor to the papers and program of case studies which are being developed to augment the limited current literature on the formulation and administration of public policy in the field of science.

Because of a recognition of the increasing importance of science policy in public administration and because of the shortage of people qualified to administer the science programs, the University of New Mexico, supported by a NASA grant, has established a five-year program seeking to attract and prepare what one adviser has called "the Science Administrators of tomorrow."

A draft of Hjornevik's work, "Guiding Work Relationships Among Scientific, Engineering, and Administrative Professionals," has been prepared and submitted to Dr. Albert H. Rosenthal, the program director. His study deals with the practical tasks of the administrator in inducing teamwork among diverse professionals.

According to Hjornevik,

"MSC has more varieties of professionals than any other (NASA) center. Besides engineers, we have medical doctors, physiologists, lawyers, nutritionists, optometrists, physicists, geologists, and many others involved in the conduct of the Apollo program. The percentage and diversity of our technical specialists is probably unique in a goal-oriented organization."



The problems this diversity creates and its influence on factors such as the interpretation of center goals, communications, influence of professional attitudes on work relationships, and coordination are discussed as Hjornevik explains six operational techniques which MSC management has used to induce teamwork. His is one of nine papers commissioned for 1968-1969.

Planned for summer publication, the papers are intended to focus on the operating experience and judgment of both

## NASA Negotiates For AAP Craft

NASA will negotiate with North American Rockwell Corp., Downey, Calif., for modifications to four Apollo spacecraft for the Apollo Applications Program.

The four Apollo spacecraft have previously been placed under contract. The combined value of these spacecraft and the modifications there to is estimated at about \$340 million.

This includes earlier costs shifted from the basic Apollo Block II contract. Total number of spacecraft under construction at the Downey facility has not changed.

The contract will require manufacturing, assembly, test and checkout of the modified command and service modules.

NR will also provide AAP mission support under the contract and will be required to do additional work related to trainers, models, mockups, simulators and design integration analysis to assure compatibility.

## West Mansion Gets Facelift

A contract has been awarded to Baxter Construction Company by Rice University for the renovation of the J. M. West Residence to house the Lunar Science Institute. Construction is now under way and occupancy is anticipated by September 1969.

scholars and professional administrators and will be used as part of the university's curriculum. Actual problem solving and decision-making are stressed.

Hjornevik's participation was requested by the University of New Mexico because of his long experience and reputation as one of NASA's outstanding administrators.

## Apollo IX (Continued from page 1)

activities. By deleting EVA the Apollo 9 crew will save one and a half hours on the total operation, and this will give them additional rest time as they come up on the critical rendezvous exercise planned Friday.

Following the complex maneuvers with the Lunar Module, the balance of the mission is scheduled to be conducted in a more leisurely pace.

The major activities planned during the sixth through tenth mission work days include landmark tracking exercises, spacecraft systems exercises, and a multispectral terrain photography experiment for Earth resources studies.

The eleventh work period begins with stowage of onboard equipment and preparations for

the SPS deorbit burn 700 miles southeast of Hawaii near the end of the 150th revolution. Splashdown for a 10-day mission will be at 8:46 a.m. CST (238:46:30 GET) in the West Atlantic some 170 miles SW of Bermuda and 720 miles east of Cape Kennedy (30.1 degrees north latitude by 67 degrees west longitude).

The Apollo 9 crew and spacecraft will be picked up by the landing platform-helicopter (LPH) USS Guadalcanal.

## AFPA Chapter Solos Tonight

The newly-organized Houston Chapter of the American Fighter Pilots Association tonight will get a figurative dunking as AFPA president Walker M. "Bud" Mahurin solos the chapter at the Nassau Bay Motor Hotel at 7:30 pm.

MSC Deputy Flight Crew Operations Director and Apollo VIII commander Frank Borman is president of the new chapter. Mahurin is North American Rockwell Space Division vice president-marketing.

The AFPA national convention begins March 21 at the Albert Thomas Convention Center with a 6:30 pm reception with Bob Hope as master of ceremonies and Sen. Barry Goldwater as guest speaker.

The Houston AFPA Chapter is seeking new members, and one does not have to be a fighter jock to join. For AFPA membership information call Jack Streit at 2658 or Dave Owens at 4102.

## EAA Basketball League Final Standings

Team	Won	Lost
The Association	15	0
2578th	14	1
Rebels	13	2
747th	12	3
Nooners	11	4
LRD Tom Cats	9	6
MPB	8	7
GCD	8	8
Dick's Dogs	7	9
14 Rogue	6	9
Ballbouncers	6	9
MI's	5	10
2103rd	3	12
CSD	2	13
ANG	1	14
ISD	0	15

The Association won the post-season eight-team double elimination tournament with the Rebels placing second.

## Rock Picking Lunartics



**LUNAR SURFACE TOOLS**—Apollo XI Commander Neil Armstrong demonstrates his rock picking ability as LM Pilot Buz Aldrin aims the camera. Practicing with tong and scoop, models of the lunar surface tools the crew will carry to the moon, the prime and backup crews trained last week on the gravel covered west flank of the Quitman Mountains, Hudspeth Co., Texas. Through practice, Armstrong found that he could steady himself by leaning on the lunar scoop, important because of the restriction placed on the ability to bend by the bulky suits to be worn during EVA.

## Boning Up for Apollo IX



**BRIEFING SESSION**—Rookie Astronaut, Rusty Schweickart, compares flight plan notes with space veterans, Jim McDivitt and Dave Scott, in crew quarters before Monday's launch of the Apollo 9 spacecraft from Kennedy Space Center's Launch Complex 39A. Although new to space flight, Rusty showed his "cool" during launch and the 4 minute 40 second burn of the SPS engine. His heart rate during launch registered a high of 72 as compared to McDivitt's 135 and Scott's 120. During SPS burn number 3, Rusty's rate was 72, McDivitt's 115 and Scott's 108. During the nights that followed, he was reported sleeping well.

## Your Job in Focus

Proposed Federal salary schedules to be effective July 1 have been released by the Civil Service Commission and the Bureau of Budget.

Information received indicates that salary increases ranging from 3 to 10.8 percent would be warranted under the full-comparability formula established by the Federal Salary Reform Act of 1967.

### Faster Claims

Procedures to speed up processing of Civil Service retirement claims to assure more prompt payment are now in effect.

Federal agencies are now authorized to submit optional or mandatory retirement applications and necessary records to the Commission 6 weeks in advance of an employee's retire-

FEDERAL CLASSIFIED EMPLOYEES  
Proposed July 1969 General Schedule

	1	2	3	4	5	6	7	8	9	10
GS-1	\$ 3,839	\$ 4,019	\$ 4,149	\$ 4,279	\$ 4,409	\$ 4,538	\$ 4,668	\$ 4,798	\$ 4,928	\$ 5,057
2	4,360	4,525	4,650	4,775	4,900	5,025	5,150	5,275	5,400	5,525
3	4,917	5,081	5,245	5,409	5,573	5,737	5,901	6,065	6,229	6,393
4	5,522	5,736	5,950	6,074	6,258	6,442	6,626	6,810	6,994	7,178
5	6,176	6,382	6,535	6,704	7,020	7,205	7,412	7,618	7,824	8,030
6	6,882	7,111	7,340	7,569	7,798	8,027	8,256	8,485	8,714	8,943
7	7,639	7,894	8,149	8,404	8,659	8,914	9,169	9,424	9,679	9,934
8	8,449	8,731	9,013	9,295	9,577	9,859	10,141	10,423	10,705	10,987
9	9,320	9,631	9,942	10,253	10,564	10,875	11,186	11,497	11,808	12,119
10	10,252	10,594	10,936	11,278	11,620	11,962	12,304	12,646	12,988	13,330
11	11,233	11,607	11,981	12,355	12,729	13,103	13,477	13,851	14,225	14,599
12	13,389	13,835	14,281	14,727	15,173	15,619	16,065	16,511	16,957	17,403
13	15,812	16,339	16,866	17,393	17,920	18,447	18,974	19,501	20,028	20,555
14	18,531	19,149	19,767	20,385	21,003	21,621	22,239	22,857	23,475	24,093
15	21,589	22,309	23,029	23,749	24,469	25,189	25,909	26,629	27,349	28,069
16	25,044	25,879	26,714	27,549	28,384	29,219	30,054	30,889	31,724	32,559
17	28,976	29,942	30,908	31,874	32,840					
18	33,495									

The increases will go into effect automatically unless changed by the President or by the Congress.

ment date. Similar procedures have already proved helpful in processing disability retirement applications.

The Commission emphasized that, to be effective to the maximum degree, both agencies and employees must cooperate in seeing that applications for retirement are filed well in advance of the retirement date.

Under previous procedures for non-disability retirements, agencies submitted the applications after the retiring employee had received his last pay check. In some cases the time lapse in submitting the application has been as long as 30 days after the employee retired and has delayed the receipt of his first annuity check by 1 to 2 months.

The new system will permit the Commission to verify employment records and compute the annuity while the employee is still on the payroll and to notify the Treasury Department to schedule payment of the first annuity check when due.

## Straight Talk from your Credit Union

A recent change in Credit Union policy permits payments of semiannual dividends. The new policy gives members greater flexibility in the use of their money as well as an increased probability for extra dividends.

The Credit Union last year paid a 5½ percent dividend.

Members who have not increased their Credit Union share holdings to a minimum \$25 are encouraged to do so.

Response to the payroll deduction plan for savings and for paying off notes has been moderate among Credit Union members. Systematic deductions make it easier to save, since the money is headed off before it gets to the member's pocket. The Credit Union office will assist in making out the forms authorizing payroll deductions.

## Roundup Swap-Shop

(Deadline for Swap-Shop classified ads is the Friday preceding Roundup publication date. Ads received after the deadline will be run in the next following issue. Ads are limited to MSC civil service employees and assigned military personnel. Maximum length is 20 words, including name, office code and home telephone number. Send ads in writing to Roundup Editor, AP3. Ads will not be repeated unless requested.)

### FOR SALE/RENT—REAL ESTATE

Large heavily wooded corner lot with view over Taylor Lake, half block to park and docks. 591-4632.

3-2-2 brick in Miramar, 1750 sq. ft., central a/h, equity \$3500, \$150/month includes taxes and insurance. Fulton Planche, 474-2660.

One acre Kemah city limits, 17 ft. elevation, rich soil, water at 25 ft. and 96 ft. \$3,175. William A. Wohnhaas, 932-4363 after 5.

One acre League City limits, 300 front feet Hwy 518. B. Sprague, 932-4363 after 5.

### FOR SALE/AUTOS

64 4-dr. Olds F-85, factory air 3-spd, new muffler, shocks, brakes, good rubber, 38,000 mi., runs perfect, \$900, E. Simon, 488-4043.

66 Olds Delta 88, 4-dr. hardtop, fully equipped, new tires, excellent condition, one owner, \$1800. C. C. Kraft, HU 2-7357.

62 Corvair Monza 2-dr bucket seats, 4-speed, new tires, good second car. Charlie Duke, 877-1389.

55 Chevrolet, 4-dr, 6 cyl., standard trans., good condition, in dry climate 12 years. \$225. Anne Accola, 591-4596.

59 Olds, 4-dr hdtop, A/C, radio, \$150. Myers, 591-4673.

1966 Simca GLS, 1000, 4-dr, full financing can be arranged. \$775. Consider trade. Floyd Turner, 733-7667.

Would you believe a 1960 Peugeot? De Gaulle's loss is your gain. Good shape. Dependable as an old friend. Gillen, 877-1666.

1963 VW sedan, two new tires, 1969 inspection, 131,000 miles, looks awful—runs great, available March 30. Charles Manry, 932-2908.

1966 Pontiac Executive, 4-dr., one owner, fully equipped. \$1,450. C. Vetter, HU 8-0275.

66 Impala Super Sport, blue with white vinyl bucket seats, air, power str, excellent condition, Ed Marzand, 488-0256 after 5.

65 Plymouth Fury, radio, factory air, power steering, 40,000 miles, excellent condition, priced below Blue Book. Paul Coan, 488-1028.

1965 Volks, \$900. W. B. McCown, PA 9-8400.

61 Caravelle convert. with two hardtops, good engine, 4 speed, extra engine, over-size pistons and sleeves, etc., extra parts. \$350. Ken Cashion, HU 2-7917.

1967 Cadillac, gold, 4-door Sedan De-Ville, loaded, new tires, low mileage. HU 7-0197 after 5.

61 Corvair Monza, 4-dr, auto, air, radio, white/red, clean, 58,000 miles. C. R. Price, 488-3685.

63 Pontiac LeMans spt cpe, 326 V-8, AT (console), A/C, new—superwide tires, brake linings, battery, carburetor, tune-up. C. O. Lewis, HU 8-3265.

### FOR SALE/MISCELLANEOUS

Lone Star 16 sailboat, 3½-hp motor, trailer, many extras, all in excellent condition. E. Simon, 488-4043.

Thomas Palace organ, 3 manuals (61 note), auto presets, band box. Walnut, 18 months old, under warranty, sacrifice \$3,800. D. Rafuse, 932-2468 evenings.

Will fly persons anywhere they want, on weekends, for cost. Blankenship, 944-0750 after 5.

Learn to fly with Aero Club Cessna 150 \$7/hr wet; C-172 \$9/hr and K-bonanza \$16/hr. Instructor \$5/hr. Ward, 877-3187.

1965 Allstate Mo-Ped, motor in good shape. \$50. Dana Murphy, 479-1942.

Drexel Italian round dining table, 3 leaves, 4 chairs, fair condition. \$200. Grubbs, 488-3872.

20" boy's bike, coaster brake, \$12. Grubbs, 488-3872.

Antique car parts swap meet, Joske's garage, West Loop 610, March 16, 9 to 5. Bring your parts to swap or sell. Jay Honeycutt.

Danish walnut Story and Clark piano; 1964 like new, self tuner. \$500. Dorothy A. Childress, Texas City, WI 8-8774.

2-yr old Sears gas range, like new, moved have built ins. D. E. Pitts, 649-3515.

One white-wall Firestone mud-grip tire and wheel, 6.95x14 for Ford Ranchero. Senter, 482-7835.

GE undercounter dishwasher, 1963 model, perfect condition. \$50. Phyllis Morton, 946-4752.

Honda CB 160, 7,000 miles. R. S. Sayers, 591-2395.

Fly with one-profit Skyrovers, Inc. at La Porte. Student pilots welcome. 172-\$6/hrs., 182-\$8/hr., J3-\$4.50/hr., \$12.50/mo. dues. 488-3872 or 944-5635.

26" boy's bicycle. \$8.99. Gillen, 877-1666.

Camp'otel cartop, sleeps 4, diner outfit, loading-storing sling, excellent condition, less than 1 yr old, \$250. R. McComb, 488-2560.

GE combination washer-dryer, yellow, \$60. Keener, HU 8-1193.

Man's bicycle—2 speed Schwinn, coaster brake, heavy duty 28". \$20. Also large twin bicycle basket \$3. Keener, HU 8-1193.

Set 4 wooden-slab folding closet doors, new. \$10. Keener, HU 8-1193.

Lafayette KT-615 hi-fi mono amp. Assembled by careful plodding kit builder. 1 year old, in excellent condition, like new in appearance, \$15. R. Musgrove, 488-3966.

Boston Terrier puppies, A.K.C., perfect markings, 2 males, 2 females, full white collars. M. Owens, 877-2872.

Three French Provincial tables (one coffee and two occasional). 4 months old, \$110. Carol Corley, 944-0854.

Samoyed (white husky) pups, 40 champions in blood line. Available March 20. Wayne Whittington, 488-4394.

Lionel electric train set, tracks mounted on 4 x 8 plywood sheet. Engine, cars, accessories, and tracks, all for \$25. E. Rubenstein, 877-3288.

Cabover camper 1968 10' Open Road, used 3 times, with jacks ready to go. \$750. Lamar, 944-5652.

1967 Honda CB 160 Super Sport, electric starter, excellent condition, \$300. Patterson GR 1-0784 after 5:30.

Marlin 32 special deer rifle. Excellent, \$60. Winchester Model 12 20-gauge \$100. Camping trailer with or without supplies. Rod Reining, 946-6396.

One third interest in 35' trimaran, ketch rigged, air conditioned, excellent condition. Equity and \$50 monthly. Roy Brown, 474-3750.

1959 Caravan Skipper mobile home, 29 x 8, carpeted, air conditioned. Ideal for single or weekend home for 4. Norman Walker, ext. 2954 (no home phone).

Modern Kroehler living room suite recently upholstered, brown sofa and orange chair, \$150. Sam Palazzola, 488-0125.

Save \$100 Clear Lake Country Club Membership—\$350. Sam Palazzola, 488-0125.

Used golf clubs with balls (Kroydon Spalding. 9 irons, 1 putter and 3 woods, \$25. Sam Palazzola, 488-0125.

TV 23" RCA b/w beautiful console 3 yrs old, just got color. Firm \$125. Sam Palazzola, 488-0125.

Siamese cat, pedigree, 1 year old, free for assurance of good home. W. B. Karpf, 488-2186.

11,500 BTU Mathes air conditioner, 220V, excellent operating condition, \$40. 6.45 x 14 nylon whitewall tire, 8,000 miles, \$5. Janicke, 944-2399.

Lawnmower—21 inch Jacobsen Victor reel—self propelled with catcher. Cost \$159.95 mower, \$18.95 catcher, sell \$100. Jack H. Cohen, 488-3171.

Plush medium pink carpet with pad, 10 ft

x 10 ft 2 in. Perfect condition, \$40. Jack H. Cohen, 488-3171.

Pure-bred Collie puppies, males \$25, females \$20, choose now, ready in two weeks. Jim Derbonne, 534-3669 Dickinson.

New taper attachment for 12" Atlas lathe, \$40. Two fans 30" blade—36 x 36 frame with venturi—\$20 each. Girala WA 1-7212.

Heavy-duty rear bumper fits Chevrolet or Ford pickup. Coated with non-organic zinc for rust prevention. \$15. Don Olano, GR 3-4012.

### WANTED

Compact or intermediate station wagon in extra good shape. 60 to 66 model. Thompson, 932-3653.

Carpool from Northern Baytown, Cedar Bayou Park area, to MSC, Bldg. 2, 8:30-5. A. L. Cornelius, 575-1248.

Want ride from League City to NASA, 7:30-4. G. Archer, 932-2246.

Boat trailer, 600 lbs cap. or greater, 1½" ball hitch. Will pay \$75 or less. H. L. Weyer, 932-3625.

Two additional members to become shareholders in Padre Island commercial lot. Predicted member monthly payment is \$110/mo. Hooper, 488-4120.

Want to start carpool from Bellfort-South Park area to NASA Bldg. 45, 7:30-4:30. Joe Millian, 483-3995.

Riders or carpool, site from Hiram Clarke area then South Loop-Gulf Fwy, 8:30-5. H. Kline, 433-5190.

Intermediate size 4-door or 4-door hard-top 1966, 67, or 68. G.M. preferred. Jerry Hammack, 877-1657.

One man's and one woman's 26-inch bicycle in good condition for under \$15 each. White, 488-3409.

### FOUND

Dog, female, in Nassau Bay Feb. 14, part poodle, grey/black, small to medium, no identification other than flea collar, friendly, 591-2395.

## Lady Volleyball League Meets

A meeting to organize an MSC Ladies' Volleyball League will be held March 13 at 5:15 pm in Room 171 Bldg 4. All team managers are urged to attend, as well as persons not signed up with a team.

## Care for the Vietnamese



**VOLUNTARY GIVING**—"CARE is there" has become a familiar response wherever hunger and hardship call for help from the American people. This has been a vital factor in South Vietnam. Because a host of servicemen have offered extra hands, a CARE team of 7 Americans has been able to channel aid to refugees and war victims in the ravaged cities and villages of every province. Your gifts to the International Service Agencies will help support this effort.

## MSC Will Study Wave Conditions Off Ireland

Sea-state studies over the North Atlantic will be carried out by NASA with aircraft flying out of Shannon, Ireland, during the first two weeks of March.

The studies are part of the Earth Resources Aircraft Program leading toward development of remote sensing equipment to be used in Earth resources research.

MSC scientists will use special airborne radar and photographic equipment to measure and obtain data on sea conditions in the areas covered. Equipment will include a radar scatterometer, infrared spectrometers and radiometer, dual-channel infrared imager, and metric and clustered cameras.

## Quarantine Test

*(Continued from page 1)*

During Apollo 9 two simulations of the transfer from the Apollo command module to the MQF were planned. A special mockup of the command module was aboard the Guadalcanal for this purpose.

For the simulations the three make-believe astronauts will enter the CM and be placed in the ocean. Then Navy teams will recover them, place the spacecraft containing them on the Guadalcanal deck and assist in the transfer to the MQF.

The transfer is carried out through a plastic tunnel to protect the biological isolation of the crewmen, who pull the tunnel into the MQF with them.

All of the MQF activities were planned so they would not interfere with the recovery of Apollo 9 itself.

## MULTISPECTRAL STEREO—

# Apollo IX Four-Barrel Camera Shoots Earth Resources Photos

Photographs taken from Earth orbit during the Apollo IX mission will be of special interest to scientists of Earth resources disciplines related to the study of the Earth and its natural and man-made features.

Analysis of these and similar photographs from space may lead to better understanding and management of the Earth's water, mineral, agricultural and other resources.

For the first time a NASA manned space flight will carry a multispectral photography experiment to provide scientists with photographs obtained by using several different film-filter combinations.

The objective of the SO65 experiment, Multispectral Terrain Photography, is to determine the usefulness of multispectral photography from orbital altitudes to the Earth resources disciplines. Pictures of selected areas will be taken simultaneously with four cameras, each with a different film-filter combination.

### Forerunner

If this orbital test of techniques proven in earlier aerial surveys is successful, the experiment will help define future multispectral photographic systems.

Equipment for the experiment consists of four model 500-EL Hasselblad cameras operated by electric motors, installed in a ring mount, and synchronized for simultaneous exposure. The mount is installed in the command module hatch window during photographic operation and the spacecraft will be oriented to provide vertical photography.

A manual intervalometer is

used to obtain systematic overlapping (stereo) photography. Each camera has a standard 80-millimeter focal-length lens and a single-film magazine containing about 150 frames.

Present plans for Earth photography emphasize coverage of southwestern US areas, where information from ground and aircraft observations for comparison is more readily available. These areas include Tucson, El Paso, Dallas/Ft. Worth, and the Department of Agriculture's Fruit, Vegetable, Soil, and Water Research Laboratory at Weslaco, Texas.

Direct and continuous access to the Mission Control Center will help optimize photographic coverage by adjusting for weather and operational conditions as the mission progresses.

Representative sample pictures will be made available to the press as quickly as possible after the Apollo IX flight.

Complete master and/or duplicate sets will be prepared for more than a dozen investigators from universities and from Federal agencies currently funded for this analysis by NASA. The data will be distributed to the scientific investigators and user agency representatives for preliminary review at a meeting to be held at MSC as soon as possible after the mission.

An estimated two to three weeks will be required for the Center's Photographic Technology Laboratory to make the high-quality film duplicates that will be provided to each participant at this meeting. Participants will be asked to report within 90 days on their preliminary analysis. These reports will be com-

plied and published by NASA.

Pictures of the Earth taken during the Apollo IX mission will be available to the public as in the case of all past missions. All Earth photos taken in previous manned missions are being made available to specific centers, such as the University of New Mexico's Technology Applications Center, for further distribution to interested purchasers.

### Filter Array

The film-filter combination for the four cameras in the SO65 experiment have been selected to obtain photography in the same spectral bands that are under active consideration for the first payload to be flown in the Earth Resources Technology Satellite (ERTS) proposed in the NASA FY-1970 budget.

This photography is needed to assist NASA and the user agencies in determining the specific bands of the electro-magnetic spectrum that should be used by the ERTS-A satellite to obtain TV images of the Earth. The photography obtained from the four film-filter combinations of the SO65 experiment will be as follows:

- Infrared Aerographic film with a Wratten 89B filter, 700 mu to 900 mu to provide narrow-band infrared data for comparison with the responses obtained in the visible region of the electromagnetic spectrum by the other cameras in the experiment.

- Color infrared (IR) film with a Wratten 15 filter, 510 mu to 900 mu region, to take advantage of plant reflectance in the near-IR region and to provide for maximum differentiation between natural and cultural features.

- Panatomic-X film with a Wratten 25A filter, 580 mu to 700 mu, to provide imagery of value in differentiating various types of land use and in enhancing high-contrast objects, such as clouds.

- Panatomic-X film with a Wratten 58 filter, 480 mu to 620 mu region, to provide for maximum penetration of lakes and for coastal water bottom topography.

The principal investigator is Dr. Paul D. Lowman, Jr., of the NASA Goddard Space Flight Center. Lowman's co-investigators are Prof. Robert N. Colwell, University of California, Berkeley; Prof. Philip N. Slater, University of Arizona; Prof. Edward Yost, Long Island University; and Herbert A. Tiedemann, MSC. Representatives from participating government agencies for this experiment are: W. A. Fischer, Department of Interior; Dr. E. P. McClain, Department of Commerce; Dr. A. B. Park, Department of Agriculture; J. W. Sherman III, Naval Oceanographic Office.

## A Spacecraft for all Seasons



**DESIGN REVIEW**—Walt Mazur of North American Rockwell discusses a procedural point to a panel of the 10-day Apollo Applications Program command/service module design review held in February at NR-Downey. Sitting at front table are MSC astronauts Paul Weitz, Walter Cunningham, Jim Bates of NR, Ed Gibson and Joseph Kerwin. The design review included systems briefings in the mockup display area and shirtsleeve and pressure suit walk-throughs. About 245 NASA and support contractor employees took part in the design review.